

## ABSTRACT OF THE DISCLOSURE

An avalanche photodiode with a wide dynamic range. An avalanche photodiode with a wide dynamic range is used in fiber-optic communication applications where optical signals of varying powers may be received. The avalanche photodiode includes a field control layer. A doping thickness product can be configured to determine a dynamic range of the avalanche photodiode. The gain of the avalanche photodiode is controllable by adjusting a bias voltage across the avalanche photodiode.

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